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ADDY, ANTHONY S

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/688,157	MANGAL ET AL.
	Examiner	Art Unit	
	ANTHONY S. ADDY	2617	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 August 2008</u>.
2a)☒ This action is FINAL.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-24</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   This action is in response to applicant's amendment filed on August 26, 2008.

Claims 1-24 are pending in the present application.

Response to Arguments

2.   Applicant's arguments filed on August 26, 2008 have been fully considered but they are not persuasive.

In response to applicant's argument that, Examiner's inherency argument with respect to O'Connor is invalid, because the Examiner has failed to establish that comparison to a threshold necessarily occurs in O'Connor's system (see page 10, second and third paragraphs of the response), Examiner respectfully clarifies that the use of the word "inherent" was a clear typographical error and the Examiner meant the feature of comparing active mobile devices to a threshold would be obvious over the teachings of O'Connor, since O'Connor teaches when the network bandwidth allocation device receives a suspend packet from a mobile device, it realizes that the bandwidth available to the network has increased (since no outgoing traffic will occur from the device in question until a resume packet is received) and accordingly can dynamically allocate additional bandwidth to one or more devices on the network by issuing a codec control signal to the one or more other devices and thereby increase their signal quality (see p. 4 [0057]).

In response to applicant's argument that, "neither O'Connor nor Yang, singularly or in combination, teach, suggest, or render obvious the claimed limitation of "changing

the bandwidth allocation algorithm, so as to change how the system dynamically

allocates the radio frequency bandwidth among the active mobile stations (see page 12,

first paragraph, page 13, first paragraph and page 14, fourth paragraph of the

response)," examiner respectfully disagrees and maintains that O'Connor in view of

Yang meets the limitations as claimed. Examiner reiterates that O'Connor teaches

when a call set-up is being negotiated, the gatekeeper of the network determines from

the number of devices active at the time which codec should be used, and calculating

the impact this will have on the available bandwidth (see p. 3 [0052]). Examiner

respectfully agrees with applicants' argument that O'Connor does not explicitly teach

changing a bandwidth allocation algorithm and maintains that it is because of this fact

that Yang is cited in the 35 U.S.C. 103 (a) rejections to teach the changing a bandwidth

allocation algorithm. Examiner reiterates that Yang clearly meets the above limitation

missing in O'Connor as set forth in the rejections, since Yang teaches a system and

method related to allocating and managing system bandwidth, wherein ***different***

scheduling algorithms can be implemented for allocating bandwidth among different

mobile aggregation classes (see p. 2 [0022] and p. 4 [0044]). According to Yang, while

various best-effort scheduling algorithms can be implemented, a round-robin scheduler

algorithm allocates bandwidth equally among the best-effort classes, and in an

alternative embodiment of the scheduling algorithm, bandwidth is allocated among the

best-effort classes using a weighted round-robin scheduling algorithm (see p. 4 [0044]).

Examiner further maintains that Yang need not specifically reference ***active mobile***

stations, since such features are already taught by the primary reference, i.e.

O'Connor, and hence the above teaching of O'Connor as modified by Yang clearly teaches and meets the claimed limitations of "changing the bandwidth allocation algorithm, so as to change how the system dynamically allocates the radio frequency bandwidth among the active mobile stations."

In response to applicant's argument that, "neither O'Connor nor Yang, singularly or in combination, teach, suggest, or render obvious the claimed limitation of "determining that the number of mobile stations concurrently being provided communication services by the wireless communication services is below a predetermined threshold number (see page 13, fourth paragraph of the response)," Examiner respectfully disagrees and maintains that O'Connor in view of Yang meets the limitations as claimed. Examiner reiterates that O'Connor teaches when a call set-up is being negotiated, the gatekeeper of the network determines from the number of devices active at the time which codec should be used, and calculating the impact this will have on the available bandwidth (see p. 3 [0052]). According to O'Connor, the codec will be selected having regard to the bandwidth free on the network, and the number of other devices which might be expected to become active during the call (see p. 3 [0052]), hence the teachings of O'Connor above broadly interpreted meets the claimed limitations of "determining that the number of mobile stations concurrently being provided communication services by the wireless communication services is below a predetermined threshold number."

Furthermore it has been held that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800

F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the present application, applicant's

arguments are based on considering each reference individually while the rejection is

based on a combination of references, hence the rejections using the combination of

O'Connor and Yang are proper and maintained as repeated below. The rejections are

made **FINAL**.

Claim Rejections - 35 USC § 103

3.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

4.   Claims 1-6, 8, 16-18 and 20-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **O'Connor, U.S. Publication Number 2004/0002339 A1**

(hereinafter O'Connor) and **Yang, U.S. Publication Number 2002/0114334 A1**

(hereinafter Yang).

Regarding claims 1 and 16, O'Connor teaches in a wireless communication

system (see Fig. 1) adapted to provide communication services to multiple mobile

stations (*e.g. wireless handsets 12*) within a given coverage area (see p. 3 [0049] and

Fig. 1), wherein the system dynamically allocates radio frequency bandwidth among the

mobile stations according to a bandwidth allocation algorithm (see p. 2 [0021] and p. 4

[0057] [*i.e. the teaching of O'Connor that radio frequency bandwidth is dynamically*

allocated based on the number of mobile devices that has stopped or restarted

transmitting traffic on the network equates to the limitations of "the system dynamically

allocates radio frequency bandwidth among the mobile stations according to a

bandwidth allocation algorithm," since the allocated bandwidth on the network obviously

has an associated allocation algorithm that is based on the number of mobile devices

that has stopped or restarted transmitting traffic on the network]), and wherein the radio

frequency bandwidth is used to send voice or data traffic to the mobile stations as part

of providing the communication services to the mobile stations (see p. 3 [0052] and p. 4

[0057-0058]), a method comprising: determining a number of active mobile stations that

are concurrently operating in the given coverage area (see p. 3 [0052]); and determining

that an amount of voice or data traffic buffered at a base station for transmission to a

mobile station as part of providing the communication services is above a

predetermined threshold amount (see p. 4 [0057] and p. 5 [0077]).

 Although, O'Connor fails to explicitly teach determining that the number of active

mobile stations exceeds a threshold and responsively changing the bandwidth

allocation algorithm, so as to change how the system dynamically allocates the radio

frequency bandwidth among the active mobile stations, however, one of ordinary skill in

the art recognizes that O'Connor's teaching of dynamically allocating radio frequency

bandwidth based on the number of mobile devices that has stopped or restarted

transmitting traffic on the network (see p. 3 [0052] and p. 4 [0057-0058]) broadly reads

on the limitations of "determining that the number of active mobile stations exceeds a

threshold and dynamically allocating system bandwidth, so as to change how the

system dynamically allocates the radio frequency bandwidth among the active mobile

station, since O'Connor teaches radio frequency bandwidth is dynamically allocated

based on a threshold number of mobile devices that has stopped or restarted

transmitting traffic on the network. Furthermore, it is obvious O'Connor compares the

active mobile devices to a threshold, since for example, O'Connor teaches when the

network bandwidth allocation device receives a suspend packet from a mobile device, it

realizes that the bandwidth available to the network has increased (since no outgoing

traffic will occur from the device in question until a resume packet is received) and

accordingly can ***dynamically allocate additional bandwidth to one or more devices***

on the network by issuing a codec control signal to the one or more other devices and

thereby increase their signal quality (see p. 4 [0057]).

    In an analogous field of endeavor, Yang teaches a system and method related to

allocating and managing system bandwidth, wherein different scheduling algorithms can

be implemented for allocating bandwidth among different mobile aggregation classes

(see p. 2 [0022] and p. 4 [0044]). According to Yang, while various best-effort

scheduling algorithms can be implemented, a round-robin scheduler algorithm allocates

bandwidth equally among the best-effort classes, and in an alternative embodiment of

the scheduling algorithm, bandwidth is allocated among the best-effort classes using a

weighted round-robin scheduling algorithm (see p. 4 [0044]).

    It would therefore have been obvious to one of ordinary skill in the art at the time

of the invention to incorporate the teachings of using different scheduling algorithms for

allocating bandwidth among different mobile aggregation classes of Yang to the method

of O'Connor to include a method of determining that the number of active mobile

stations exceeds a threshold and responsively changing the bandwidth allocation

algorithm, so as to change how the system dynamically allocates the radio frequency bandwidth among the active mobile stations, in order to dynamically allocate system bandwidth using a wide range of adaptive algorithms that depend upon a nominal channel power level and an average effective data rate of mobile stations in a given coverage area to thereby increase their signal quality and the overall system utilization of the network.

Regarding claims 2 and 17, O'Connor in view of Yang teaches all the limitations of claims 1 and 16. O'Connor in view of Yang further teaches a computer readable medium having stored therein instructions for causing a processor to execute the method of claims 1 and 16 (see *O'Connor*, p. 5 [0077]).

Regarding claim 20, O'Connor teaches a wireless communication system (see Fig. 1) comprising: a base station (*wireless base station 10*), having an antenna arrangement for communication over an air interface with a plurality of mobile stations (*e.g. wireless handsets 12*) in a given coverage area (see p. 3 [0049] and Fig. 1), wherein the base station dynamically allocates bandwidth to the mobile stations according to a bandwidth allocation algorithm (see p. 2 [0021] and p. 4 [0057] [*i.e., the teaching of O'Connor that radio frequency bandwidth is dynamically allocated based on the number of mobile devices that has stopped or restarted transmitting traffic on the network equates to the limitations of "the system dynamically allocates radio frequency bandwidth among the mobile stations according to a bandwidth allocation algorithm," since the allocated bandwidth on the network obviously has an associated allocation algorithm that is based on the number of mobile devices that has stopped or restarted*

transmitting traffic on the network]), and program logic, stored in data storage and

executable on a processor (see p. 5 [0077]), to determine that a number of active

mobile stations are operating concurrently operating in the given coverage area (see p.

3 [0052]).

Although, O'Connor fails to explicitly teach changing the bandwidth allocation

algorithm based on the number, so as to change how the system dynamically allocates

the radio frequency bandwidth among the active mobile stations, however, one of

ordinary skill in the art recognizes that O'Connor's teaching of dynamically allocating

radio frequency bandwidth based on the number of mobile devices that has stopped or

restarted transmitting traffic on the network (see p. 3 [0052] and p. 4 [0057-0058])

broadly reads on the limitations of "determining that the number of active mobile

stations exceeds a threshold and dynamically allocating system bandwidth, so as to

change how the system dynamically allocates the radio frequency bandwidth among the

active mobile stations, since O'Connor teaches radio frequency bandwidth is

dynamically allocated based on a threshold number of mobile devices that has stopped

or restarted transmitting traffic on the network. Furthermore, it is obvious O'Connor

compares the active mobile devices to a threshold, since for example, O'Connor

teaches when the network bandwidth allocation device receives a suspend packet from

a mobile device, it realizes that the bandwidth available to the network has increased

(since no outgoing traffic will occur from the device in question until a resume packet is

received) and accordingly can ***dynamically allocate additional bandwidth to one or***

more devices on the network by issuing a codec control signal to the one or more other devices and thereby increase their signal quality (see p. 4 [0057]).

In an analogous field of endeavor, Yang teaches a system and method related to allocating and managing system bandwidth, wherein different scheduling algorithms can be implemented for allocating bandwidth among different mobile aggregation classes (see p. 2 [0022] and p. 4 [0044]). According to Yang, while various best-effort scheduling algorithms can be implemented, a round-robin scheduler algorithm allocates bandwidth equally among the best-effort classes, and in an alternative embodiment of the scheduling algorithm, bandwidth is allocated among the best-effort classes using a weighted round-robin scheduling algorithm (see p. 4 [0044]).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify O'Connor with Yang to include changing the bandwidth allocation algorithm based on the number, so as to change how the system dynamically allocates the radio frequency bandwidth among the active mobile stations, in order to dynamically allocate system bandwidth using a wide range of adaptive algorithms that depend upon a nominal channel power level and an average effective data rate of mobile stations in a given coverage area to thereby increase their signal quality and the overall system utilization of the network.

Regarding claims 3, 4, 5, 21, 22 and 23, O'Connor in view of Yang teaches all the limitations of claims 1 and 20. O'Connor in view of Yang further teaches a wide range of adaptive algorithms may be constructed depending upon the particular

circumstances of the communication system to support the number of members of the

defined groups (see *Yang*, p. 4 [0044]).

      The combination of O'Connor in view of Yang fails to explicitly teach switching

the bandwidth allocation algorithm to a maximum-aggregate-traffic algorithm, common-

data-throughput algorithm or a common-power algorithm. However, it would therefore

have been obvious to one of ordinary skill in the art at the time of the invention to modify

the method and system of O'Connor and Yang to include, switching the bandwidth

allocation algorithm to a maximum-aggregate-traffic algorithm, common-data-throughput

algorithm or a common-power algorithm, since Yang teaches a system and method

related to allocating and managing system bandwidth, wherein different scheduling

algorithms can be implemented for allocating bandwidth among different mobile

aggregation classes (see p. 2 [0022] and p. 4 [0044]), in order to dynamically allocate

system bandwidth using a wide range of adaptive algorithms that depend upon a

nominal channel power level and an average effective data rate of mobile stations in a

given coverage area to thereby increase their signal quality and the overall system

utilization of the network.

      Regarding claim 6, O'Connor in view of Yang teaches all the limitations of claim

1. O'Connor in view of Yang further teaches a method, wherein responsively changing

the bandwidth allocation algorithm comprises: switching the bandwidth allocation

algorithm to use a first bandwidth allocation algorithm to allocate the radio frequency

bandwidth among mobile stations within a first group of mobile stations; and switching

the bandwidth allocation algorithm to use a second bandwidth allocation algorithm to

allocate the radio frequency bandwidth among mobile stations with a second group of mobile stations (see *Yang*, p. 4 [0044]).

Regarding claims 8 and 24, O'Connor in view of Yang teaches all the limitations of claims 1 and 20. O'Connor in view of Yang further teaches a system, wherein the base station communicates over an air interface with the mobile stations, and wherein the mobile stations are mobile phones (see O'Connor, p. 3 [0049] and Fig. 1), but fails to explicitly teach the base station uses CDMA. However, one of ordinary skill in the art recognizes it would have been obvious to implement the wireless base station as taught by O'Connor to use CDMA in order to allow multiple mobile devices to share the same spectrum at the same time to maximize network bandwidth resources.

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of O'Connor and Yang, wherein the base station uses CDMA in order to allow multiple mobile devices to share the same spectrum at the same time to maximize network bandwidth resources.

Regarding claim 18, O'Connor in view of Yang teaches all the limitations of claim 16. O'Connor in view of Yang further teaches a method, determining that the amount of voice or data traffic buffered at the base station for transmission to the mobile station as part of providing communication services is below the predetermined threshold; and responsively decreasing the amount of bandwidth allocated to the mobile station for transmitting the communication traffic from the base station to the mobile station (see *O'Connor*, p. 2 [0032] and p. 4 [0057-0058]).

5.   Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Connor, U.S. Publication Number 2004/0002339 A1 (hereinafter O'Connor) and

Yang, U.S. Publication Number 2002/0114334 A1 (hereinafter Yang) and further in

view of **Choi et al., U.S. Patent Number 6,724,740 (hereinafter Choi).**

        Regarding claim 9, O'Connor teaches in wireless network adapted to provide

communication services concurrently to multiple stations (*e.g. wireless handsets 12*)

operating within a given coverage area (see p. 3 [0049] and Fig. 1), a method

comprising: and determining that a threshold number of mobile stations being provided

communication services are concurrently operating in a given coverage area (see p. 3

[0052]).

        O'Connor fails to explicitly teach responsively changing a bandwidth allocation

algorithm for the mobile stations being provided communication services in the given

coverage area, wherein the bandwidth allocation algorithm is used to allocate a forward

supplemental channel among the mobile stations and wherein the forward supplemental

channel is used to send voice or data traffic from a base station to the mobile stations

as part of providing the communication services.

        In an analogous field of endeavor, Yang teaches a system and method related to

allocating and managing system bandwidth, wherein different scheduling algorithms can

be implemented for allocating bandwidth among different mobile aggregation classes

(see p. 2 [0022] and p. 4 [0044]). According to Yang, while various best-effort

scheduling algorithms can be implemented, a round-robin scheduler algorithm allocates

bandwidth equally among the best-effort classes, and in an alternative embodiment of

the scheduling algorithm, bandwidth is allocated among the best-effort classes using a weighted round-robin scheduling algorithm (see p. 4 [0044]).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify O'Connor with Yang to include responsively changing a bandwidth allocation algorithm, wherein the bandwidth allocation algorithm is used to allocate channel bandwidth among mobile stations, in order to dynamically allocate system bandwidth using a wide range of adaptive algorithms that depend upon a nominal channel power level and an average effective data rate of mobile stations in a given coverage area to thereby increase their signal quality and the overall system utilization of the network.

Although, O'Connor in view of Yang fails to explicitly teach the allocation algorithm is used to allocate a forward supplemental channel among the mobile stations and wherein the forward supplemental channel is used to send voice or data traffic from a base station to the mobile stations as part of providing the communication service, one of ordinary skill in the art recognizes that such features are very well known in the art as taught for example by Choi.

In an analogous field of endeavor, Choi teaches a CDMA communication system wherein a forward supplemental channel is allocated among mobile stations and wherein the forward supplemental channel is used to send voice or data traffic from a base station to the mobile stations as part of providing the communication service (see col. 31, lines 12-36 and col. 32, lines 44-50).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify O'Connor and Yang with Choi to include a method of allocating a forward supplemental channel among the mobile stations and wherein the forward supplemental channel is used to send voice or data traffic from a base station to the mobile stations as part of providing the communication service, in order to allocate an exclusive dedicated channel such as a forward supplemental channel for communication between a base station and a mobile terminal as taught by Choi (see col. 4, lines 19-35).

Regarding claim 10, the combination of O'Connor, Yang and Choi teaches all the limitations of claim 9. The combination of O'Connor, Yang and Choi further teaches a computer readable medium having stored therein instructions for causing a processor to execute the method of claim 9 (see *O'Connor*, p. 5 [0077]).

Regarding claims 11, 12, 13, the combination of O'Connor, Yang and Choi teaches all the limitations of claim 9. The combination of O'Connor, Yang and Choi further teaches a wide range of adaptive algorithms may be constructed depending upon the particular circumstances of the communication system to support the number of members of the defined groups (see *Yang*, p. 4 [0044]).

The combination of O'Connor, Yang and Choi fails to explicitly teach switching the bandwidth allocation algorithm to a maximum-aggregate-traffic algorithm, common-data-throughput algorithm or a common-power algorithm. However, it would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify the method and system of O'Connor, Yang and Choi to include, switching the bandwidth

allocation algorithm to a maximum-aggregate-traffic algorithm, common-data-throughput

algorithm or a common-power algorithm, since Yang teaches a system and method

related to allocating and managing system bandwidth, wherein different scheduling

algorithms can be implemented for allocating bandwidth among different mobile

aggregation classes (see p. 2 [0022] and p. 4 [0044]), in order to dynamically allocate

system bandwidth using a wide range of adaptive algorithms that depend upon a

nominal channel power level and an average effective data rate of mobile stations in a

given coverage area to thereby increase their signal quality and the overall system

utilization of the network.

Regarding claim 14, the combination of O'Connor, Yang and Choi teaches all the

limitations of claim 9. The combination of O'Connor, Yang and Choi further teaches a

method, wherein responsively changing the bandwidth allocation algorithm comprises:

switching the bandwidth allocation algorithm to use a first bandwidth allocation algorithm

to allocate the radio frequency bandwidth among mobile stations within a first group of

mobile stations; and switching the bandwidth allocation algorithm to use a second

bandwidth allocation algorithm to allocate the radio frequency bandwidth among mobile

stations with a second group of mobile stations (see *Yang*, p. 4 [0044]).

6.   Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Connor, U.S. Publication Number 2004/0002339 A1 (hereinafter O'Connor) and

Yang, U.S. Publication Number 2002/0114334 A1 (hereinafter Yang) as applied to

claim 1 above, and further in view of **Nee et al., U.S. Patent Number 6,876,857**

(hereinafter Nee).

Regarding claim 7, O'Connor in view of Yang teaches all the limitations of claim 1.

O'Connor in view of Yang further teaches a method, wherein determining that a

threshold number of mobile stations being provided communication services are

concurrently operating in the given coverage area (see *O'Connor*, p. 3 [0052]).

The combination of O'Connor and Yang fails to explicitly teach determining a current

time of day; and using a predictive model to determine that the threshold number of

mobile stations are concurrently operating in the given coverage area at the current time

of day.

Nee, however, teaches a method and system of efficiently allocating bandwidth

within a mobile communication network, wherein a time of day information and historic

usage data of mobile devices in the communication network are used to more

accurately predict the available bandwidth in contiguous cells (see col. 9, lines 9-35 and

Fig. 2A). According to Nee, the current bandwidth allocation for a cell together with a

predicted bandwidth usage for the time when the session would be requested from that

cell can be combined in a weighted fashion to provide a more accurate prediction of the

available bandwidth at some time in the future (see col. 9, lines 34-40).

It would therefore have been obvious to one of ordinary skill in the art at the time of

the invention to modify O'Connor and Yang with Nee to include a method of determining

a current time of day; and using a predictive model to determine that the threshold

number of mobile stations are concurrently operating in the given coverage area at the

current time of day, in order that an estimation of a current bandwidth allocation for a

cell together with a predicted bandwidth usage for the time when the session would be

requested from that cell can be combined in a weighted fashion to provide a more

accurate prediction of the available bandwidth at some time in the future as taught by

Nee (see col. 9, lines 34-40).

7.   Claims 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over

O'Connor, U.S. Publication Number 2004/0002339 A1 (hereinafter O'Connor) and

Yang, U.S. Publication Number 2002/0114334 A1 (hereinafter Yang) and **Choi et**

al., U.S. Patent Number 6,724,740 (hereinafter Choi) as applied to claim 9 above, and

further in view of **Nee et al., U.S. Patent Number 6,876,857 (hereinafter Nee)**.

    Regarding claim 15, the combination of O'Connor, Yang and Choi teaches all the

limitations of claim 9. The combination of O'Connor, Yang and Choi further teaches a

method, wherein determining that a threshold number of mobile stations being provided

communication services are concurrently operating in the given coverage area (see

O'Connor, p. 3 [0052]).

    The combination of O'Connor, Yang and Choi fails to explicitly teach determining a

current time of day; and using a predictive model to determine that the threshold

number of mobile stations are concurrently operating in the given coverage area at the

current time of day.

    Nee, however, teaches a method and system of efficiently allocating bandwidth

within a mobile communication network, wherein a time of day information and historic

usage data of mobile devices in the communication network are used to more accurately predict the available bandwidth in contiguous cells (see col. 9, lines 9-35 and Fig. 2A). According to Nee, the current bandwidth allocation for a cell together with a predicted bandwidth usage for the time when the session would be requested from that cell can be combined in a weighted fashion to provide a more accurate prediction of the available bandwidth at some time in the future (see col. 9, lines 34-40).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify O'Connor, Yang and Choi with Nee to include a method of determining a current time of day; and using a predictive model to determine that the threshold number of mobile stations are concurrently operating in the given coverage area at the current time of day, in order that an estimation of a current bandwidth allocation for a cell together with a predicted bandwidth usage for the time when the session would be requested from that cell can be combined in a weighted fashion to provide a more accurate prediction of the available bandwidth at some time in the future as taught by Nee (see col. 9, lines 34-40).

8.   Claims 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over **O'Connor, U.S. Publication Number 2004/0002339 A1 (hereinafter O'Connor)** and **Yang, U.S. Publication Number 2002/0114334 A1 (hereinafter Yang)** as applied to claim 16 above, and further in view of **Choi et al., U.S. Patent Number 6,724,740 (hereinafter Choi).**

Regarding claim 19, O'Connor in view of Yang teaches all the limitations of claim 16. O'Connor in view of Yang fails to explicitly teach a method, wherein the wireless network is a CDMA network, and wherein responsively increasing the amount of bandwidth allocated to the mobile station comprises increasing an amount of a forward supplemental channel allocated to the mobile station.

In an analogous field of endeavor, Choi teaches a CDMA communication system wherein a forward supplemental channel is allocated among mobile stations and wherein the forward supplemental channel is used to send voice or data traffic from a base station to the mobile stations as part of providing the communication service (see col. 31, lines 12-36 and col. 32, lines 44-50). Furthermore, O'Connor teaches dynamically allocating radio frequency bandwidth based on the number of mobile devices that has stopped or restarted transmitting traffic on the network (see p. 3 [0052] and p. 4 [0057-0058]).

It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to modify O'Connor and Yang with Choi to include a method, wherein the wireless network is a CDMA network, and wherein responsively increasing the amount of bandwidth allocated to the mobile station comprises increasing an amount of a forward supplemental channel allocated to the mobile station, in order to allocate an exclusive dedicated channel such as a forward supplemental channel for communication between a base station and a mobile terminal as taught by Choi (see col. 4, lines 19-35).

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

10.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ANTHONY S. ADDY whose telephone number is

(571)272-7795. The examiner can normally be reached on Mon-Thur 8:00am-6:30pm.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Alexander Eisen can be reached on 571-272-7687. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony S Addy/
Examiner, Art Unit 2617

       /Alexander Eisen/
       Supervisory Patent Examiner, Art Unit 2617